

## ABSTRACT OF THE DISCLOSURE

An approach for detecting polymers and polymer fragments by analyzing mass analysis data of mixtures that include labeled versions of the polymers is disclosed. A library of polymer fragments is generated based on the possible fragments of a parent polymer. For 5 each fragment in the library, a theoretical mass for both a natural version and a labeled version is generated. The labeled version may be based on a heavier isotope of an element. Data from a mass analysis, such as a mass spectrographic analysis, is received and automatically analyzed to identify whether a mass doublet is observed for each fragment in the library. The mass doublets correspond to the mass peaks of the natural and labeled 10 versions of the fragments in the library. A determination is made whether a particular mass peak is from a labeled parent polymer or whether the particular mass peak is from an unlabeled source.